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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,899	09/27/2005	Dong-Gyu Kim	AB-1521 US	4096

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EXAMINER

HEYMAN, JOHN S

ART UNIT	PAPER NUMBER
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2871

MAIL DATE	DELIVERY MODE
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11/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/550,899

Applicant(s)

KIM, DONG-GYU

Examiner

John Heyman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>07/25/2007</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 07/25/2007 was filed after the mailing date of the instant application on 09/27/2005. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement has been considered by the examiner.

Claim Rejections - 35 USC § 112

2. Claim 5 recites the limitation "the storage conductor" in line 2. There is insufficient antecedent basis for this limitation in the claim. It appears that this claim was meant to depend on Claim 4.

Claim Rejections - 35 USC § 103

3. Claims 1-3, 9, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al (Chang – US 2003/0020852), cited on the IDS of 07/25/2007 above) taken with Yamamoto (US 2002-182766) of record. Looking at Claim 1 herein and comparing it with Fig. 4 of Chang, a gate line with a gate electrode 212, a gate insulating layer 213, a semiconductive layer 214, a data line with a source electrode 216a, a drain electrode 216b formed in part over the semiconductive layer, a color filter 217a is formed directly on the data line/electrode, a light blocking layer 218 and pixel electrode 219 are shown as recited. Not shown are the passivation layer and spacer recited in clauses 8 and 10. Fig. 1 of Yamamoto shows both a passivation layer

110 and spacer 113. It would have been obvious to include a passivation layer and a spacer as shown in Yamamoto in Chang for the reason given in Yamamoto, namely, to provide a flattening film covering the color filter (para. 22) and to provide a cell thickness of a predetermined profile (para. 55) respectively.

4. Regarding dependent Claims 2 and 3, Yamamoto discloses that both the light blocking layer and spacer is of an organic material to render obvious the limitations of these claims (paragraphs 53 and 55). It would have been obvious for the skilled worker to apply Yamamoto's teaching to Chang for the reason given in Yamamoto, namely, to provide a uniform film thickness in the fabrication process (para. 52).

5. Regarding dependent Claim 9, Yamamoto discloses an acrylic material for the passivation layer in para. 54 to meet this claim.

6. Regarding dependent Claim 10, note that semiconductive layer 214 in Chang has the substantially the same planar shape as the data lines and drain electrodes as recited in this claim.

7. Regarding independent Claim 11, each of the limitations recited in this claim are as described in the rejection of Claim 1 including the limitations of rejected dependent Claims 2 and 3 above to thus meet this claim. See the rejection of these claims above.

8. Claims 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang and Yamamoto as applied to claims 1-3 above, and further in view of Rho (US 6,862,050) of record. Not shown by either Chang or Yamamoto are the details of the storage conductor recited in these claims. Fig. 3 of Rho shows a storage conductor 30

formed in combination with a TFT under a gate insulating layer 40 to thus meet the limitation of dependent Claim 4.

9. Regarding dependent Claim 5 (insofar as definite), note "second opening" 120 to meet the limitation of this claim.

10. Regarding dependent Claims 6-8, again, note storage electrode 30 under gate insulating layer 40 to meet Claim 6; a storage conductor formed (misspelled "firmed" in the Claim 7) overlapping storage electrode 30 and connected to pixel electrode 140 as recited in Claim 7; and wherein second opening 120 of Rho would necessarily expose the storage conductor and through the passivation layer similar to first opening 111 of Yamamoto to meet Claim 8.

11. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chang and Yamamoto as applied to claim 11 above, and further in view of Lee, of record. Not shown by Chang or Yamamoto is the protrusion recited in this claim. Fig. 5 of Lee shows a protrusion 90 formed on at least one of the first and second panels which has a height smaller than spacer 113 shown in Fig. 1 of Yamamoto. It would have been obvious to include a protrusion in Yamamoto for the reason given in Lee, namely, to obtain a wide viewing angle and fast response time (col. 1 line 8).

12. It is noted that none of the rejections on the merits of dependent claims 2-10 and 13 with respect to the applied art have been argued by applicant. Instead, Applicant relies on the amendment to the independent claims for patentability.

13. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagata et al. (Nagata – US 6,118,505, cited on IDS of 07/25/2007) taken with Rho (US

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6,862,050), above. Looking at this claim and comparing it with Fig. 4 of Nagata, a first panel 1 including a gate electrode 2, a gate insulating layer 4, semiconductor layer 5, a source/drain electrode 8, a light blocking layer 31Black, a passivation layer 32 and a pixel electrode 15 and a second panel 17 including a common electrode 18. Note that light blocking layer 31Black (same as 14Black of Fig. 2) of Nagata is formed directly on data electrode 8 and that it made of organic material (col. 10, line 31, and col. 12, line 52). Not shown by Nagata is the color filter included as part of the second panel, and a spacer formed between the panels as recited in the last two clauses of Claim 14. Fig. 13 of Rho shows a color filter 160 as part of the second panel and a spacer 190 between the two panels as recited. It would have been obvious to incorporate the color filter and spacer features of Rho in Nagata as this is a well known design expedient in the liquid crystal art, and as such may not form the basis of patentability under 35 USC 103.

14. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nagata and Rho as applied to claim 14 above, and further in view of Lee (US 6,535,259) of record. Not shown by either Nagata or Rho is the protrusion with a slanted surface as recited in this claim. Fig. 5 of Lee shows a protrusion 90 having a slanted surface formed on at least one of the first and second panels, having a height less than a height of the spacer 190 of Rho. It would have been obvious to provide a protrusion as taught by Lee in Nagata or Rho for the reason given in Lee, namely, to obtain a wide viewing angle and a fast response time, (col. 1 line 8).

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Heyman whose telephone number is 571 272-5730. The examiner can normally be reached on 7:30am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571- 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSH

Anders Schultze
ANDERS SCHULTZE
PATENT EXAMINER